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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/544,045B

DATE: 01/17/2003 86

TIME: 10:47:56

Input Set : A:\OMRF 178.ST25.txt

Output Set: N:\CRF4\01172003\I544045B.raw

3 <110> APPLICANT: Oklahoma Medical Research Foundation
4 Sauer, Brian Lee
5 Rufer, Andreas Walter
7 <120> TITLE OF INVENTION: Method for Selecting Recombinase Variants with Altered
Specificity
9 <130> FILE REFERENCE: OMRF 178
11 <140> CURRENT APPLICATION NUMBER: 09/544,045B
12 <141> CURRENT FILING DATE: 2000-04-06
14 <150> PRIOR APPLICATION NUMBER: 60/127,977
15 <151> PRIOR FILING DATE: 1999-04-06
17 <160> NUMBER OF SEQ ID NOS: 68
19 <170> SOFTWARE: PatentIn version 3.1
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 343
23 <212> TYPE: PRT
24 <213> ORGANISM: Artificial Sequence
26 <220> FEATURE:
27 <223> OTHER INFORMATION: Cre
29 <400> SEQUENCE: 1
31 Met Ser Asn Leu Leu Thr Val His Gln Asn Leu Pro Ala Leu Pro Val
32 1 5 10 15
35 Asp Ala Thr Ser Asp Glu Val Arg Lys Asn Leu Met Asp Met Phe Arg
36 20 25 30
39 Asp Arg Gln Ala Phe Ser Glu His Thr Trp Lys Met Leu Leu Ser Val
40 35 40 45
43 Cys Arg Ser Trp Ala Ala Trp Cys Lys Leu Asn Asn Arg Lys Trp Phe
44 50 55 60
47 Pro Ala Glu Pro Glu Asp Val Arg Asp Tyr Leu Leu Tyr Leu Gln Ala
48 65 70 75 80
51 Arg Gly Leu Ala Val Lys Thr Ile Gln Gln His Leu Gly Gln Leu Asn
52 85 90 95
55 Met Leu His Arg Arg Ser Gly Leu Pro Arg Pro Ser Asp Ser Asn Ala
56 100 105 110
59 Val Ser Leu Val Met Arg Arg Ile Arg Lys Glu Asn Val Asp Ala Gly
60 115 120 125
63 Glu Arg Ala Lys Gln Ala Leu Ala Phe Glu Arg Thr Asp Phe Asp Gln
64 130 135 140
67 Val Arg Ser Leu Met Glu Asn Ser Asp Arg Cys Gln Asp Ile Arg Asn
68 145 150 155 160
71 Leu Ala Phe Leu Gly Ile Ala Tyr Asn Thr Leu Leu Arg Ile Ala Glu
72 165 170 175
75 Ile Ala Arg Ile Arg Val Lys Asp Ile Ser Arg Thr Asp Gly Gly Arg
76 180 185 190
79 Met Leu Ile His Ile Gly Arg Thr Lys Thr Leu Val Ser Thr Ala Gly

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```

80          195          200          205
83 Val Glu Lys Ala Leu Ser Leu Gly Val Thr Lys Leu Val Glu Arg Trp
84          210          215          220
87 Ile Ser Val Ser Gly Val Ala Asp Asp Pro Asn Asn Tyr Leu Phe Cys
88 225          230          235          240
91 Arg Val Arg Lys Asn Gly Val Ala Ala Pro Ser Ala Thr Ser Gln Leu
92          245          250          255
95 Ser Thr Arg Ala Leu Glu Gly Ile Phe Glu Ala Thr His Arg Leu Ile
96          260          265          270
99 Tyr Gly Ala Lys Asp Asp Ser Gly Gln Arg Tyr Leu Ala Trp Ser Gly
100          275          280          285
103 His Ser Ala Arg Val Gly Ala Ala Arg Asp Met Ala Arg Ala Gly Val
104          290          295          300
107 Ser Ile Pro Glu Ile Met Gln Ala Gly Gly Trp Thr Asn Val Asn Ile
108 305          310          315          320
111 Val Met Asn Tyr Ile Arg Asn Leu Asp Ser Glu Thr Gly Ala Met Val
112          325          330          335
115 Arg Leu Leu Glu Asp Gly Asp
116          340
119 <210> SEQ ID NO: 2
120 <211> LENGTH: 13
121 <212> TYPE: DNA
122 <213> ORGANISM: artificial sequence
124 <220> FEATURE:
125 <223> OTHER INFORMATION: Inverted repeat sequence
127 <220> FEATURE:
128 <221> NAME/KEY: misc_feature
129 <222> LOCATION: (1)..(3)
130 <223> OTHER INFORMATION: N at positions 1-3 can be A, T, G, or C.
133 <220> FEATURE:
134 <221> NAME/KEY: misc_feature
135 <222> LOCATION: (6)..(7)
136 <223> OTHER INFORMATION: N at positions 6 and 7 can be A, T, G, or C.
139 <400> SEQUENCE: 2

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W--> 140 nnnacnnncgt ata

13

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143 <210> SEQ ID NO: 3
144 <211> LENGTH: 34
145 <212> TYPE: DNA
146 <213> ORGANISM: artificial sequence
148 <220> FEATURE:
149 <223> OTHER INFORMATION: variant lox sites
151 <220> FEATURE:
152 <221> NAME/KEY: misc_feature
153 <222> LOCATION: (1)..(3)
154 <223> OTHER INFORMATION: N at postitions 1-3 can be A, G, C, or T
157 <220> FEATURE:
158 <221> NAME/KEY: misc_feature
159 <222> LOCATION: (6)..(7)
160 <223> OTHER INFORMATION: N at positions 6 and 7 can be A, T, G, C,

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163 <220> FEATURE:
164 <221> NAME/KEY: misc_feature
165 <222> LOCATION: (14)..(21)
166 <223> OTHER INFORMATION: N at positions 14-21 can A, G, T, or C
169 <220> FEATURE:
170 <221> NAME/KEY: misc_feature
171 <222> LOCATION: (28)..(29)
172 <223> OTHER INFORMATION: N at postions 28 and 29 can be A, T, G, or C
175 <220> FEATURE:
176 <221> NAME/KEY: misc_feature
177 <222> LOCATION: (32)..(34)
178 <223> OTHER INFORMATION: N at postiions 32-34 can be A, T, G, or C
181 <400> SEQUENCE: 3
W--> 182 nnnacnncgt atannnnnnn ntatacgngg tnnn 34
185 <210> SEQ ID NO: 4
186 <211> LENGTH: 33
187 <212> TYPE: DNA
188 <213> ORGANISM: artificial sequence
190 <220> FEATURE:
191 <223> OTHER INFORMATION: variant lox sites
193 <400> SEQUENCE: 4
194 gatacaacgt atataccttt ctatacgttg tat 33
197 <210> SEQ ID NO: 5
198 <211> LENGTH: 34
199 <212> TYPE: DNA
200 <213> ORGANISM: artificial sequence
202 <220> FEATURE:
203 <223> OTHER INFORMATION: Specific and non-specific sequences for Cre recombinase
205 <220> FEATURE:
206 <221> NAME/KEY: misc_feature
207 <222> LOCATION: (1)..(3)
208 <223> OTHER INFORMATION: N at postions 1-3 can be A, T, G, or C
211 <220> FEATURE:
212 <221> NAME/KEY: misc_feature
213 <222> LOCATION: (14)..(21)
214 <223> OTHER INFORMATION: N at positions 14-21 can be A, T, C, or G
217 <220> FEATURE:
218 <221> NAME/KEY: misc_feature
219 <222> LOCATION: (32)..(34)
220 <223> OTHER INFORMATION: N at positions 32-34 can be A, T, G, or C
223 <400> SEQUENCE: 5
W--> 224 nnnacttcgt atannnnnnn ntatacgaag tnnn 34
227 <210> SEQ ID NO: 6
228 <211> LENGTH: 8
229 <212> TYPE: PRT
230 <213> ORGANISM: artificial sequence
232 <220> FEATURE:
233 <223> OTHER INFORMATION: oligonucleotide
235 <400> SEQUENCE: 6

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RAW SEQUENCE LISTING

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Input Set : A:\OMRF 178.ST25.txt

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```

237 Ala Thr Arg Val Asx Tyr Gly Cys
238 1          5
241 <210> SEQ ID NO: 7
242 <211> LENGTH: 34
243 <212> TYPE: DNA
244 <213> ORGANISM: artificial sequence
246 <220> FEATURE:
247 <223> OTHER INFORMATION: primer
249 <400> SEQUENCE: 7
250 ataacttcgt ataatgtatg ctatacgaag ttat          34
253 <210> SEQ ID NO: 8
254 <211> LENGTH: 29
255 <212> TYPE: DNA
256 <213> ORGANISM: artificial sequence
258 <220> FEATURE:
259 <223> OTHER INFORMATION: primer
261 <400> SEQUENCE: 8
262 aaataatcta gactgagtgt gaaatgtcc          29
265 <210> SEQ ID NO: 9
266 <211> LENGTH: 31
267 <212> TYPE: DNA
268 <213> ORGANISM: artificial sequence
270 <220> FEATURE:
271 <223> OTHER INFORMATION: primer
273 <400> SEQUENCE: 9
274 atatataagc ttatcattta cgcgttaatg g          31
277 <210> SEQ ID NO: 10
278 <211> LENGTH: 33
279 <212> TYPE: DNA
280 <213> ORGANISM: artificial sequence
282 <220> FEATURE:
283 <223> OTHER INFORMATION: primer
285 <400> SEQUENCE: 10
286 ataagcggcc gctgagcttg gctgttttgg cgg          33
289 <210> SEQ ID NO: 11
290 <211> LENGTH: 36
291 <212> TYPE: DNA
292 <213> ORGANISM: artificial sequence
294 <220> FEATURE:
295 <223> OTHER INFORMATION: primer
297 <400> SEQUENCE: 11
298 gccgtctcga gagagtttgt agaaacgcaa aaaggc          36
301 <210> SEQ ID NO: 12
302 <211> LENGTH: 30
303 <212> TYPE: DNA
304 <213> ORGANISM: artificial sequence
306 <220> FEATURE:
307 <223> OTHER INFORMATION: primer
309 <400> SEQUENCE: 12

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RAW SEQUENCE LISTING

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TIME: 10:47:56

Input Set : A:\OMRF 178.ST25.txt

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310 gtcaagctag ctagcaggtt tcccgactgg                      30
313 <210> SEQ ID NO: 13
314 <211> LENGTH: 36
315 <212> TYPE: DNA
316 <213> ORGANISM: artificial sequence
318 <220> FEATURE:
319 <223> OTHER INFORMATION: primer
321 <400> SEQUENCE: 13
322 acattgcggc cgcagatctc ctctagagtc gacctg              36
325 <210> SEQ ID NO: 14
326 <211> LENGTH: 20
327 <212> TYPE: DNA
328 <213> ORGANISM: artificial sequence
330 <220> FEATURE:
331 <223> OTHER INFORMATION: primer
333 <400> SEQUENCE: 14
334 ttgggctag cgaattcgag                                  20
337 <210> SEQ ID NO: 15
338 <211> LENGTH: 20
339 <212> TYPE: DNA
340 <213> ORGANISM: artificial sequence
342 <220> FEATURE:
343 <223> OTHER INFORMATION: primer
345 <400> SEQUENCE: 15
346 ttggggccag ctaaaccatgc                                20
349 <210> SEQ ID NO: 16
350 <211> LENGTH: 20
351 <212> TYPE: DNA
352 <213> ORGANISM: artificial sequence
354 <220> FEATURE:
355 <223> OTHER INFORMATION: primer
357 <400> SEQUENCE: 16
358 cgggtgggaga atgttaatcc                                20
361 <210> SEQ ID NO: 17
362 <211> LENGTH: 18
363 <212> TYPE: DNA
364 <213> ORGANISM: artificial sequence
366 <220> FEATURE:
367 <223> OTHER INFORMATION: primer
369 <400> SEQUENCE: 17
370 ggacacagtg cccgtgtc                                  18
373 <210> SEQ ID NO: 18
374 <211> LENGTH: 21
375 <212> TYPE: DNA
376 <213> ORGANISM: artificial sequence
378 <220> FEATURE:
379 <223> OTHER INFORMATION: primer
381 <400> SEQUENCE: 18
382 tctgcgttct gatttaattct g                              21

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RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/544,045B

DATE: 01/17/2003
TIME: 10:47:58

Input Set : A:\OMRF 178.ST25.txt
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:2; N Pos. 1,2,3,6,7
Seq#:3; N Pos. 1,2,3,6,7,14,15,16,17,18,19,20,21,28,29,32,33,34
Seq#:5; N Pos. 1,2,3,14,15,16,17,18,19,20,21,32,33,34
Seq#:26; N Pos. 17,18,19,20,21,22,23,24,25
Seq#:27; N Pos. 17,18,19,20,21,22,23,24,25
Seq#:41; N Pos. 6,7

VERIFICATION SUMMARY

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Input Set : A:\OMRF 178.ST25.txt

Output Set: N:\CRF4\01172003\I544045B.raw

L:140 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:182 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:224 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:484 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
L:502 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:1458 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:0